THE AMERICAN BEE JOURNAL CIRCULATES ALL OVER THE WORLD
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THOMAS G. NEWMAN,
EDITOR.

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EDITORIAL BUZZINGS.

Mamma and I were looking o'er
The last bee-papers for bee-lore.
Our three-yeared "pet" was busy too,
Removing wrappers from a few.

New costumed A. B. J. she spied;
Then, "Oh! new picture! see!" she cried,
Then paused—then, with admiring glee,
"A nice big 'pungkun!' Mamma, see."
—*Oliver Foster.*

Bees in Cellars should be allowed to remain there until settled warm weather. We often think of an apt remark made by Dr. Miller to us some years ago. It was this: "I never regretted letting my bees remain in the cellar too long, but I have often regretted taking them out too soon." Let all take the hint. Do not be in any hurry to take them out on the first fine day! Wait!

Fastening Foundation in Sections.—Mr. G. W. Cole has sent us some samples of the work done by his machine—the temperature being 40° and 46° in the room where it was done—the rapidity being 8 and 10 in a minute. He says the temperature should be from 60° to 90° to have the best results. The work is well done, and at the higher temperature (46°) it is perfect.

Candied Honey in Combs, etc.—H. V. S. Stout, Dover, Del., on March 3, 1888, writes:

I have a very few sections and combs in which the honey has candied. How can I get them cleaned up for use the coming season? Bees are wintering well. The weather has been mild, and queens are laying freely.

Give the candied honey in the sections and combs to the bees. They will clean them up.

Gathering the Statistics.—Some names have been received at this office of those who would be willing to act as correspondents for the gathering of statistics by the Government, but nothing like the number required, or even an apology for such number. Some approve the plan, and others do not. It is quite evident to us that no plan already mentioned will be acceptable to all, and, further, that there is much apathy in reference to the matter among bee-keepers. Perhaps they do not want it known what they are doing, and take a more selfish view of the affair. Here is a letter from E. France, of Platteville, Wis., who does not like the method we proposed, of gaining the information through the assessors:

It is stated on page 131, that the best and surest way to obtain statistics of the bee-industry, is to have questions in the assessors' blanks to be answered. That plan would not suit the average bee-keeper. Perhaps not one-fourth of the bees in the country are now taxed, and if the assessors took down the number of colonies of bees, honey, etc., he, of course, would have to set some value on the property, and levy taxes on the same. I do not know how to get the statistics; but I am satisfied that the assessor would not get one-half of the information, and what he did get, would not be worth very much.

That is right, let the matter be discussed freely, and all the points of interest brought before the readers of bee-literature. It is not so difficult to say what *will not do*, as it is to point out a successful method, which will give universal satisfaction. We are anxiously awaiting the advent of the person who will say, "Behold I show you a more excellent way," and who can prove the assertion satisfactorily.

Badly Stung.—Mr. G. B. Olney, of Atlantic, Iowa, on March 2, 1888, sends us the following item from the Cumberland, Iowa, *Current*:

We see by an article in the *Democrat* that the *Messenger* has succeeded in running against the red-hot end of the AMERICAN BEE JOURNAL. It does, or should feel the sting of the contact.

Mr. Olney remarks that there is a general interest arising in that community about bee-keeping, and that in consequence there will be many from Atlantic who will attend the Bee-Keepers' Convention at Red Oak this week. He adds:

The article from the AMERICAN BEE JOURNAL of Dec. 21, 1887, is going the rounds, and I am glad to meet so many with a pleasant smile (raised to about 90° in the shade). That "dose of poison" article is stinging the *Messenger* thoroughly on all sides. Having no shield to ward off the thrusts, it is compelled to quietly take all that comes, without the slightest resistance.

A Frame Lifter is sent to our Museum by Mr. B. E. Foster, Utica, N. Y. It consists of two bent wires as handles, operating two "nippers" at the ends of the wires, which hold the frame, and it will answer the purpose very well. It is placed in the Museum.

Change to Columbus, O.—We think that the expediency of changing the place for holding the North American Bee-Keepers' Convention is quite apparent. The Grand Army of the Republic will hold a Reunion at Columbus, O., during the Centennial celebration at that city, and these two attractions alone will call for cheap transportation—probably one-fifth of the usual fare. This item is usually the largest one for bee-keepers who attend conventions—especially the International. We understand that this matter is now before the executive committee, and the change from Toledo to Columbus should be made without the least hesitation or delay. All the "expressions" sent to this office but two, are in favor of the change to Columbus—and not one has been received which favored its being held in Toledo! Two State conventions have passed resolutions favoring the change to Columbus, and have elected delegates to attend that convention. Let the change be made and announced at once, so that all arrangements may be made for a rousing meeting.

Queens from the South.—L. B. Graves, of Nineveh, Ind., asks the following questions:

1. Would it be practicable to send South for an early queen, say April or early in May, to Italianize my 5 colonies of bees?
2. Would they be as hardy as queens reared in the northern States?
3. Are Albinos a desirable strain of bees?
4. What is the general opinion of the Carniolans? Please answer through the BEE JOURNAL.

As there are many who have made similar inquiries to the above, we will reply for the benefit of all.

1. Yes; but it should not be shipped until the weather is settled and reasonably warm.
2. Yes; equally so.
3. Yes; if they have as good working qualities as their plumage.
4. They are hardy, and generally liked.

Be Wise and Be Happy.—This is the title of a circular sent to us by W.R. G., Greenville, Texas. It purports to be sent out from Chicago, and he wanted us to investigate the source. It is another of the many *frauds* operating through the United States mails. It wants the "dupes" to send a sum of money for a book entitled "Secrets of Bee-Keeping," which promises all kinds of impossible things, among the latter, it proposes to teach the buyers of the book how to get "from 200 to 600 pounds of honey from every colony.

We sent the money to the address named for a copy of the book. It was a boarding house; the person named had a small room there, but did his business only through the mail, said the keeper of the house, and she added, "He is not in through the day." The way to be *wise* is not to send money to such unknown persons. All the books of any value on the pursuit of bee-keeping can be obtained at this office without risk, at the publishers' prices.

GLEANS OF NEWS.

Honey for Analyzation.—Mr. J. R. Bostwick, of New Milford, Conn., has sent us a copy of the *Gazette*, which states that he has supplied some honey to be analyzed from which a standard for the State will be made. He evidently has a double end in view, for with such a "State standard" derived from an analysis of his honey, he has a secure field for all the honey he can produce. The *Gazette* says:

On Jan. 27, H. L. Jeffrey packed at the residence of J. R. Bostwick a few samples of honey to be sent to the Connecticut Experiment Station to be analyzed, and the analysis to be used as a standard. Mr. Jeffrey, a few days before, had been requested by letter from the Station, to send some samples of liquid and comb honey known to be the *straight* article, for analysis.

When Mr. Jeffrey was sorting out and finishing up the crop of Mr. Bostwick's honey last October, he selected two one-quart jars full, with the intention of placing them in the hands of the State Board. One of the jars was taken to Hartford when the Agricultural Board met, the other went to the Experiment Station in the case of samples. In the same case was a sample of the same lot of honey equal in every way except that it had been exposed to the cold weather, and had become as hard as any sample of butter, but it was not frozen. This peculiar quality possessed by honey, to become hard at a temperature below 50°, and its peculiar appearance in that state, is as sure a test of purity as is any chemical analysis.

A 5 per cent. adulteration, or even an addition of water, is very plainly seen, as it leaves quite an amount of liquid among the granules of the sugars which the pure honey as it is gathered from the flowers is composed of. Honey that is not properly ripened is easily detected even by a person not an expert. Many look upon granulated or solidified honey with suspicion, and yet the fact is that the harder the honey the purer it is.

In the case sent to the Experiment Station were two samples of comb honey; one from the basswood bloom, usually sold by the misnomer of white clover, and the other was gathered from fall flowers and the juices of fruit. Both were rich and heavy in quality, though lacking in tempting appearance. Mr. Bostwick had about 13 gallons of this quality of extracted honey, and quite a crop of comb honey.

Eucalyptus Honey.—In the Oakland, Calif., *Enquirer* for the 9th ult., Mr, W. A. Pryal makes these remarks about eucalyptus honey:

All along the foothills near Oakland bees do well, and annually store a good supply of as luscious honey as one could well desire to eat. The honey gathered during the winter months may be said to be collected exclusively from the flowers of eucalyptus trees, and is of a dark color, and very thick. This honey is said to possess medicinal properties. The clearest and most delicious honey is stored during the latter part of May, and all through June.

Bees were first brought to this county in the fifties, long before they were introduced to the now famous honey regions of the State.

Scatter the Leaflets.—Look at the list (with prices) on the second page.

A Sugar-Producing Tree. — Mr. Lewis Proxmire, of Mt. Union, Pa., sends us the following from the *Grocers' Criterion*, for publication in the BEE JOURNAL:

A report comes from the East which is of great importance, if true. It is that there has been discovered in British India a blossom of such saccharine properties that it is destined to revolutionize the sugar business of the world. It is the flower of the mahwa, or moola, a tree of large size, which abounds in the southern portion of Hindostan. This blossom has a sweet taste, and yields one-half its weight in sugar. The Hindoos have for a long period been accustomed to extract a syrup from the mahwa's flowers but in the most primitive fashion, without attempting to develop a process. The tree, it is stated, demands neither care nor cultivation. It produces annually a thousand pounds (?) of blossoms, which it sheds during the night. The saccharine matter is also serviceable for a spirituous liquor, and for an oil which may be used for both lighting and food. If this wonderful report is correct, it may be seen at a glance what a disastrous competition the mahwa is likely to make with existing sugar industries.

The best West India plantations produce 400 pounds per aspent (1¼ acres), and the French and German sugar beet farms do not equal this amount. But it is claimed that the blossoms of five mahwa trees will yield the same amount, a statement not consistent with the reported weight of the bloom, which, however, must be an error. From 200 to 250 trees can be grown upon an aspent from which it results that the crop of sugar will be from 40 to 50 times greater per acre of land than that of the sugar cane. The English-speaking Hindoo press is already urging the Government to take steps for making this new sugar industry a monopoly as far as possible.

We know nothing more of this tree than is stated in the article.

Dr. A. B. Mason has been appointed superintendent of the Apiarian Department of the Ohio Centennial Exposition, to be held at Columbus next fall. The Director General says that a suitable building will be provided for the Bee-Department, and that the superintendent shall have "full swing." The Doctor writes us as follows concerning the arrangements contemplated:

I have thought of having an octagonal building erected, with a fine large pyramid of comb and extracted honey in the centre, so made as to constantly, but slowly revolve with other pyramids, and different kinds of arrangements on the sides, all enclosed with bee-proof (and thief proof) wire-cloth, and all the light to be admitted through the roof.

Suitable premiums will be awarded, and if the North American Bee-Keepers' Convention should meet at Columbus, there would be no trouble in getting the best judges in the country to award the premiums.

French Book.—From our friend and co-laborer Mr. Ed. Bertrand, Nyon, Switzerland, comes a new bee-book in the French language. It is a guide for the apiarist for each month of the year. It contains 150 pages, and is illustrated. Mr. Bertrand is one of the most progressive and practical apiarists of Europe, and his book is full of valuable suggestions concerning the proper management of bees. Its cost after paying transportation and postage is about 80 cents.

Bee-Cellars. — Mr. A. Bridges, of Ontario, gives this description of his preparation of his bee-cellar for the present winter:

I boarded the walls of my cellar with rough boards, leaving a small space between the stone walls and the boards, then I lined the board walls with building paper, and laid a board floor on the bottom of the cellar, leaving a 2-inch space between the bottom and the floor. This makes the cellar very dry and warm; no frost can possibly get in.

The Farmers' and Bee-Keepers' Association of Newaygo County, Mich., was held at Fremont, on Feb. 9 and 10, 1888, and new By-Laws adopted. The Glee Club rendered some excellent music, and a banquet was spread at the St. Charles Hotel, of which about 70 partook. Mr. Geo. E. Hilton was re-elected Secretary-Treasurer. Mr. W. E. Gould read an essay on "Practical Bee-Keeping," which was very interesting. "Relative benefits of apiculture, agriculture and horticulture," by Geo. E. Hilton, and a talk about "The Clover," by A. M. Alton, closed the exercises.

New Catalogues for 1888 are on our desk, from the following persons:

Frank A. Eaton, Bluffton, O.—12 pages—Eaton's Specialties.

Nixon Nozzle and Machine Co., Dayton, O.—20 pages—Spraying Machinery.

Wm. H. Bright, Mazeppa, Minn.—24 pages—Bee-Keepers' Supplies.

Smith & Smith, Kenton, O.—24 pages—Implements in Bee-Culture.

G. M. Doolittle, Borodino, N. Y.—4 pages—Italian Bees and Queens.

H. P. Langdon, East Constable, N. Y.—4 pages—Bees and Queens.

Thomas B. Blow, Welwyn, Herts, England—64 pages—Bee-Keepers' Supplies.

W. E. Gould, Fremont, Mich.—12 pages—Bees, Queens, and Apiarian Supplies.

CONVENTION NOTICES.

☞ The Wabash County Bee-Keepers' Association will meet at North Manchester, Ind., on April 10, 1888. F. S. COMSTOCK, *Sec.*

☞ The Eastern Indiana Bee-Keepers' Association will hold its spring meeting on Saturday, April 21, 1888, at Richmond, Ind. M. G. REYNOLDS, *Sec.*

☞ The Cortland Union Bee-Keepers' Association will hold its spring meeting on May 8, 1888, at Cortland, N. Y., at 10 a.m. All bee-keepers are invited. W. H. BEACH, *Sec.*

☞ The Des Moines County Bee-Keepers' Association will hold its next meeting on April 24, 1888, at Burlington, Iowa. JOHN NAU, *Sec*

☞ The Hardin County Bee-Keepers' Association will meet at the Court House in Eldora, Iowa, on the second Saturday in each month, at noon (12 o'clock), until further notice. J. W. BUCHANAN, *Sec.*

☞ The next regular meeting of the Susquehanna County Bee-Keepers' Association will be held at New Milford, Pa., on Saturday, May 5, 1888. H. M. SEELEY, *Sec.*

☞ The tenth annual meeting of the Texas State Bee-Keepers' Association will be held at the bee-yards of Vice-President W. R. Graham, in Greenville, Hunt Co., Texas, on May 2 and 3, 1888. A leading feature of the convention will be criticisms upon subjects that have been mentioned in the bee-papers. A good time is expected, so let all Texas and Arkansas bee-keepers attend. A cordial invitation is extended to all bee-keepers wheresoever dispersed. Remember, no hotel bills to pay at our conventions! B. F. CARROLL, *Sec.*

CONVENTION DIRECTORY.

1888. *Time and Place of Meeting.*

Apr. 11.—Stark County, at Canton, O.
Mark Thomson, Sec., Canton, O.

Apr. 21.—Eastern Indiana, at Richmond, Ind.
M. G. Reynolds, Sec., Williamsburg, Ind.

Apr. 24.—Des Moines County, at Burlington, Iowa.
John Nau, Sec., Middletown, Iowa.

May 2, 3.—Texas State, at Greenville, Tex.
B. F. Carroll, Sec., Blooming Grove, Tex.

May 5.—Susquehanna County, at New Milford, Pa.
H. M. Seeley, Sec., Harford, Pa.

May 7.—Welland County, at Welland, Ont.
J. F. Dunn, Sec., Ridgeway, Ont.

May 8.—Cortland Union, at Cortland, N. Y.
W. H. Beach, Sec., Cortland, N. Y.

May 10.—Nashua, at Nashua, Iowa.
H. L. Rouse, Sec. Ionia, Iowa.

Aug. 14.—Colorado State, at Denver, Colo.
J. M. Clark, Sec., Denver, Colo.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Bees in Fine Condition.—Calvin Boyd, Petrolea, Ont., on March 3, 1888, says:

I commenced the season of 1887 with 20 colonies, increased them to 37 colonies, and took 1,500 pounds of extracted honey, and 100 pounds of comb honey. I doubled up my colonies to 27 colonies last fall. I fed 400 pounds of sugar syrup, and packed them for winter on the summer stands. They had their first flight on Feb. 24, the first since the middle of November; they appear to be in fine condition. All the bees in this locality appear to be wintering well.

How to Fasten Foundation.—M. M. Cram, Mankato, Minn., writes thus:

My method of fastening foundation in sections, is as follows: By means of a blade fastened to a lever, I split the section before it is folded, from one of the ends to the first **V**-groove; then spreading the parts sufficiently, I insert the edge of the piece of foundation, of whatever size I wish to use, into the crack so made; then folding the section, the dovetailed parts hold the foundation between the parts of the split end as in a vice. Of course, with sections having bee-spaces only above and below, the right end must be split; that is, the end having the bee-spaces in it. By using a suitable gauge, the section is split exactly in the centre.

Packing Bees for Winter.—L. C. Seabright, Blaine, O., on Feb. 29, 1888, says:

Mr. Jno. A. Buchanan, on page 109, asks me to fix things up so as to help me out with my "pet theory," as he chooses to term the plan pursued by hundreds of practical apiarists in regard to chaff packing. I have tried other modes of wintering my bees, but none so successful as packing them on the summer stands. Admitting that, I commenced last season with 63 colonies, only receiving 60 pounds of honey. Would Mr. B. say that had I wintered my bees in single-walled hives, with nothing but a cushion on top of the frames, as Mr. Lewedag had done, I would have secured a good crop of honey? Well, Mr. Lewedag has broken over the line, for he is wintering only 2 colonies *a la* Buchanan theory. I do not think that it is the fault of the hive, the bees or my management, that I got no honey to speak of.

Last week we had beautiful, spring-like weather, and yesterday morning the mercury was down to 5° above zero. It is during such sudden changes in the latter part of the winter and commencement of spring, that I most appreciate chaff-packing.

Wintering Well—Introducing Queens.—Edmund R. Buller, Campbellford, Ont., on March 2, 1888, writes:

Bees are wintering well in this locality, and those in the cellar, from present appearances, are likely to come through all right, although we have had weather 30° below zero at times. One of my bee-houses, built in the side of a hill, and covered with cedar and earth, contains 50 colonies which seem to be doing remarkably well, with a steady temperature of 42°.

I wish some correspondent would give directions on how to *successfully* introduce virgin queens to strong colonies. I have tried it, and always have failed.

Moving Bees.—W. L. Ginter, McCallsburg, Iowa, on March 5, 1888, says:

I commenced last spring with 9 colonies, increased them to 18, by natural swarming, and obtained about 20 lbs. of comb honey from mustard, of which there is a plenty in this neighborhood. I am nine miles from any basswood, and there is but very little white clover here yet, but it is getting thicker every year. I winter my bees in the cellar, and I have to move about a mile this spring. Had I better let the bees have a flight before moving them? or shall I move them and then let them out?

[When taken from the cellar, put them where they are to stay, and let them mark their location, and enjoy a flight at the same time.—ED.]

Marketing Honey.—Chas. H. Van Vechten, of Victor, N. Y., says:

The greatest market is for nice white clover honey, which is put up in the nice, 1¼ pound sections. I canvassed a whole city over two different times, and I cannot sell 1,500 pounds in that city. But, hold on; one person said he could give 10 cents per pound; that he had written to several parties in New York, and he could not get such prices as are quoted in the bee-papers. I notice that in San Francisco they quote honey at 19 cents for the best in one-pound sections. There must a big mistake somewhere; for in a warm climate as that to keep bees, and being easy to winter, you find California honey in all the Eastern markets: and then see the quotations above New York, and other markets. There has not been a pound of honey sold here for less than 14 cents, and that was early in the season. Bee-keepers should never wait until this time of the year to sell honey. That is where the trouble is.

Feeling Encouraged'—Honey-Boards.—Wm. Lossing, Hokah, Minn., on Feb. 14, 1888, writes:

I put 196 colonies in a winter cave in good condition, and they seem to be all right now. The last season was a poor one for honey in this part of Minnesota. There was no white clover, and very little basswood; but there was plenty of fall honey to fill up the hives for winter. My hives were never heavier than they were last fall. I am looking for a better time for bee-keepers, for the reason that poor crops connected with low prices have discouraged a great many beginners, besides inducing some of the older ones to go out of the business. I have kept bees for 12 years, and never felt more encouraged. I had about 1,500 pounds of extracted honey, which I sold readily for cash at a good price.

Please answer the following: 1. Which kind of a queen-excluding honey-board is the best, all things considered? 2. Does perforated-zinc give perfect satisfaction to those who have used it for years?

[1. The "slatted" queen-excluding honey-board, made of alternate wood and zinc, is undoubtedly the best. As zinc contracts and expands with changing temperature, when used in full sheets over the brood-frames, it sometimes "bulges" or presents a contorted surface; the alternate wood and zinc allows room for expansion and contraction, and keeps it always straight and in place. For a general opinion, read answers to Query 521, on page 150.

2. Yes; as far as we have ever heard, it *has* "given perfect satisfaction, when the holes are of exact size. A worker, when loaded with honey, requires a hole five thirty-seconds of an inch, and this will exclude a queen or drone. Some of that first manufactured varied between five and six thirty-seconds, and did permit the passage of an under-sized queen.—ED.]

Better Prospects for a Crop.—G. W. Johnston, Holden, Mo., on Feb. 28, says:

Bees are wintering well here. Those in the cellar have used from 4 to 7 pounds of honey per colony; while those on the summer stands have consumed from 10 to 15 pounds. The prospect for a crop of honey is better than it was at this time last year.

Severe Winter in Canada.—Thos. Stokes, Minesing, Ont., on March 2, 1888, writes:

We have had a pretty severe winter here, since a little before Christmas. The lowest it has registered was 27° below zero, on Jan. 21. It has been from 10° to 20° below a great many days. But for all the cold, my cellar has only lowered from 47° to 44°, and I think that is very good, not having any underground ventilation, or artificial heat either. Bees are wintering well. Snow has covered the ground all winter, about 18 inches on the level in the woods. The roads are very much drifted.

Selling Honey to Private Families.—David Wilcox, Oxford, N. H., on Feb. 29, 1888, says:

I have 108 colonies of bees, and my last year's increase was 30 colonies. I had 2,400 pounds of honey, 500 pounds of which was taken from the brood-chamber and unfinished sections. There was little fall honey. I fed them about 400 pounds of sugar to carry them through the winter. I put 1½ colonies into the cellar, and the rest in chaff hives. All are doing finely so far. I sold the last of my honey last week. Nearly all of my honey was sold to private families, from my wagon or sleigh. I believe more than ever in this way of disposing of our honey. I consider that we had about half a crop last year. There are but few who have used box-hives that obtain any surplus honey. I sell my extracted honey in quart jars, for the same price by the pound as the other. When the weather is warm, I carry it in bulk.

QUERIES AND REPLIES.

PROPER TEMPERATURE FOR BEES TO FLY.

Written for the American Bee Journal

Query 523.—1. At what temperature is it safe to give bees a flight? 2. Is it advisable to do so with snow on the ground? My bees were put in the cellar on Nov. 10, 1887.—Wis.

1. Fifty-five degrees to 60°. 2. Not unless quite warm.—A. B. MASON.

We would not give bees that are in the cellar any flight until spring. The temperature should be above 45°.—DADANT & SON.

1. At 60° in the shade. 2. No. Do not do it until it is about time for willows to blossom, except it may be as a doubtful remedy for a very serious disease.—R. L. TAYLOR.

Our bees here in the South are very seldom three days consecutively without a flight. I have noticed that they will not fly out when it is 40° to 42° above zero.—P. L. VIALLON.

1. About 50° in the shade. 2. It would be desirable that no snow should be close to the hives in front. But why do they need a flight? Bees ought to stay in the cellar from Nov. 10 to April 10, with no bad results.—EUGENE SECOR.

1. I let the bees on the summer stands judge the temperature for themselves. I would not give bees wintered in a cellar a flight until taken out in the spring. 2. It is; the bees that are found on the snow, after a flight, are mainly old bees whose lives are spent.—MRS. L. HARRISON.

1. I do not generally put my bees out until the temperature is 55° or more; but if the sun is shining it might do at a lower temperature. 2. If snow is on the ground, I should like it pretty warm.—C. C. MILLER.

1. About 50° Fahr. 2. Yes, if the snow has a crust on it. If they are all right in the cellar, it is better to leave them until the snow disappears.—C. H. DIBBERN.

1. If bees in the cellar are meant, it is not best to give them a flight at all until spring, unless they are diseased and restless; and I am not sure that it is then. 2. It is safe to let bees on the summer stands fly whenever they want to, snow or no snow.—M. MAHIN.

1. Some of my colonies were put into the cellar last October, and I do not expect to take them out before April 8 or 10, unless I see pollen before that time. 2. My bees have had many a flight with snow on the ground, with no bad results.—H. D. CUTTING.

I would not remove the bees from the cellar while there was snow on the ground, unless they were *very* restless. Fifty degrees or 55° in the sun, 45° in the shade; and if very windy, not then. You must be governed by circumstances.—J. M. HAMBAUGH.

1. At 45° in the shade, if still, and the sun is shining. Otherwise it must be as warm as 55°. 2. Yes, bees can get off the snow as well as off the bare ground if the temperature is right. If your bees are quiet, let them alone till about April 10 to April 25.—G. M. DOOLITTLE.

1. Not lower than 60° Fahr. If the bees are quiet, let them alone. The very best evidence of successful wintering is that they are quiet. Go among them as much as is necessary to brush up and keep the room tidy, but do not fuss and tinker with them without cause.—J. M. SHUCK.

It all depends upon whether or not there is snow upon the ground, how brightly the sun shines, and how hard the wind blows. Leave a few (packed) colonies out as a guide. I have had mine fly safely at 50° in the shade, with snow, when the air was still and the sun was shining. It was 45° once.—JAMES HEDDON.

I should like 60° to 65° in the shade. I would not remove the bees until April 10, when they can commence work if they keep quiet, as they will if the food and the temperature of the cellar is all right. If uneasy in the hive, they may safely be given a flight on a real warm day, even if there is snow. Some cover the snow with straw.—A. J. COOK.

1. I leave my hives open all the time, and allow the bees to fly out whenever they choose. If any are not able to return, I consider them no loss, as they would, in my judgment, die if confined. 2. It makes no difference with myself, whether there is snow on the ground or not, for the above reason.—J. E. POND.

In this climate it is never safe for bees to take a flight when there is snow on the ground, and they seldom attempt to do so unless they have been confined unusually long, and are distressed for a flight. It depends upon the weather, in fact, more than on the temperature. On a still, sunshiny day, bees may fly safely at from 50° to 56°; while they fly with dangerous consequences at 60°, if the wind is blowing a stiff breeze.—G. W. DEMAREE.

The lowest temperature that bees may be taken from a cellar for a flight when there is snow on the ground, is 50° in the shade; but the air must be quiet and the sun shining clear. On putting them out, put straw or hay in front of the hives for the bees to alight on. If it is a cloudy day, the temperature should be 60°. If there are high winds, with the sun shinging clear, the temperature should be at least 55° in the shade.—G. L. TINKER.

If the bees in the cellar are restless or diseased, it might be of advantage to give them a flight when the temperature is from 55° to 60° Fahr. If they are on the summer stands let the bees fly or not, as they desire, whether snow is on the ground or not. To take bees out of the cellar before April 10, in this latitude, is very unwise.—THE EDITOR.

PRACTICING CONTRACTION AND BUILDING COMBS.

Written for the American Bee Journal

Query 524.—1. In contracting the hive to five or six combs, more or less, for wintering, and the same to economize heat for breeding in early spring, do you work the combs to one side of the hive, and use one division-board? Or do you put the combs to the middle of the hive and use a division-board on each side? If you use two, what are your reasons for so doing? 2. When not using foundation, what way do you secure the building of the comb solid to the bottom-bars of hanging frames?—Ohio.

1. To one side. 2. I use foundation.—C. C. MILLER.

1. I use a dummy of the right thickness to fill the space desired. 2. By putting them in an upper story.—G. M. DOOLITTLE.

1. We never contract strong colonies to such small space. For winter we would use two division-boards rather than one, because we can put absorbents on both sides.—DADANT & SON.

1. I use a Langstroth hive 14½ inches wide, with 9 frames in the winter, and at least one inch of space over the top of the frames. 2. I use full frames of foundation, and consider it more profitable to do so than to use simple starters.—J. E. POND.

1. I put the combs to one side of the hive in nearly every case when I have to contract. 2. I use foundation.—H. D. CUTTING.

1. To one side, and one division-board. 2. Strong colonies will generally secure the comb to the bottom-bar. When they fail to do it, and it is *necessary* to have it done, I insert bits of comb to fill out.—J. P. H. BROWN.

I. I do not use division-boards. 2. The best way to get frames filled "solid" with comb, is to invert them, by turning the hive upside down. Very fair success may be attained by tiering the hives up, putting the frames to be completely filled over the brood-nest, but without a honey-board.—J. M. SHUCK.

1. When the hive is protected by chaff, etc., on the outside, I work the combs to one side of the hive, and use one division-board. If not so protected, I use two division-boards, and pack between the division-boards and sides of the hive. 2. By reversing.—A. B. MASON.

1. I use two division-boards, as it makes nearly a dead air space on each side of the hive, and protects the colony from the cold or sudden changes. 2. When I do not use foundation, I let the bees do as they please.—MRS. L. HARRISON.

1. In the middle, provided the colony was to be wintered out-doors, and not packed. If packed, or in the cellar, I would put them to one side. You see the reason, of course. 2. I know of but one practical way to get frames *full* of combs, foundation or no foundation, and that is by reversing. That secures them so, and keeps them so.—JAMES HEDDON.

1. I use two division-boards when there is room for them, and the reason is, that it "economizes heat." 2. I secure it when I use the combs for extracting purposes in the second story of the hive; that is, over the brood-nest, during a good honey-flow.—R. L. TAYLOR.

1. Yes; here in the South, when it is necessary to contract, we work the combs to one side, and use a wooden division-board. 2. I would not do without foundation. A few years ago, before the "foundation days," I either used a ½ or ¾ inch strip of natural comb, or a triangular guide added after the frame was built out in comb.—P. L. VIALLON.

1. I have, and I practice both ways. I think it about as well to use one division-board. If we pack well and warmly above, I think we need not mind side-packing very much, especially if bees winter well.—A. J. COOK.

1. I have in use a brood-chamber having about the same capacity as six Langstroth frames, and I will transfer the greater part of my bees to such brood-chambers in the spring. I shall not need to use division-boards in these hives. 2. I invert the brood-chamber.—G. L. TINKER.

1. It is better to use two division-boards. But if the frames are full of comb, contraction is of little value. 2. I let the bees do as they please. They do not want brood-combs attached to the bottom-bars. If the combs are put in an upper story, and filled with honey, they will generally be built solid.—M. MAHIN.

If the bees are to be wintered in a cellar, I would place the combs on one side, using one division-board. For out-doors, I would use two. The dead air space or packing is, to some extent, a non-conductor of heat. 2. It can be done by inverting, or inserting pieces of comb.—C. H. DIBBERN.

In winter, I work the combs to the centre of the hive, using a division-board at each side of the cluster, and filling the intervening space with dry maple leaves, chaff, or some equally as good an absorbent. After absorbents are removed in the spring, I usually confine them to the south side of the hive, to get the warmth from the sun, using but one division-board. 2. I use full sheets of foundation; hence I have no rule to obtain full combs otherwise.—J. M. HAMBAUGH.

1. I have never wintered bees on the summer stands. If I should, and should practice contraction, I would prefer the combs in the centre, and the division-boards on both sides. I would then pack some dry absorbent and non-conducting material between the division-board and the outside of the hive. 2. I know of no way to secure that result without inverting the hive or using it above another for extracting from. The latter will not always accomplish the object sought.—EUGENE SECOR.

1. My practice is to place the combs on the south side of the brood-chamber, and close with a division-board on the north side. This plan is decidedly best for this climate, as the bees get the benefit of the warmth of the sun, at intervals through the winter, and especially in the spring. 2. I do not care to have them built solid to the bottom-bars, except where they are used for taking honey from the combs. In that case some narrow strips of comb are pressed between the lower edge of the comb and bottom-bars, at their first use for extraction, and the bees will make them solid for all time.—G. W. DEMAREE.

1. To put the combs in the centre and have a division-board on each side, is preferable because of controlling the temperature by the use of cushions or absorbents on the sides, when bees are wintered on the summer stands. 2. As the bees evidently do not desire "the building of the comb solid to the bottom-bars of hanging frames," we see no reason in trying to "secure" such. We prefer the use of comb foundation.—THE EDITOR.

Apiary Register.—All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and begin to use it. The prices are as follows:

For 50 colonies (120 pages)	$1 00
" 100 colonies (220 pages)	1 25
" 200 colonies (420 pages)	1 50

CORRESPONDENCE.

HIBERNATION.

What is Hibernation, as Applied to Bees?

Written for the American Bee Journal

BY J. F. LATHAM.

As an answer to the interrogatory on page 42, "What is hibernation?" I would say, analogically, the term signifies to pass the winter, Latin *hiemo*, to winter, and *hybernia*, winter quarters. In the roots *hi-bern(i)a(tion)* we have the material from which linguists have constructed the word, and assigned its modern position in etymology, which, when interpreted in the sense justified by the original, indefinitely conveys the idea of its subjects' passing the winter in winter quaters. In the accredited scientific acceptance of the term, hibernation is used to designate a condition; in the common acceptance it is used to designate an act.

The actual question is, which of the two definitions most correctly describes the general phases accompanying the passage of the hive-bee through its period of winter confinement in Northern latitudes? Bee-keepers in cold climates know from observation that their colonies pass the winter, in winter quarters of some kind; but they are not as positive in regard to their physiological condition during that period; nor is it possible that they can be, so far as optical evidence demonstrates the actual hibernal condition. Therefore, it would seem admissible to say, in the scientific appellation of the term, that the hive-bee does not hibernate.

It is a well-known fact that, in the temperate zones, the hive-bee is influenced, in a greater or less degree, by the periodical changes of the seasons; and, in experiencing those changes it must conform to natural circumstances, or "laws" governing the principles of life, animation, growth, disintegration and suspension, as well as the revivifying efflux of successive rounds of development in an androgynal aspect. But when the chemical process by which the flame of life is stimulated to activity, becomes inactive, the organic mechanism—the visible machine—which constitutes the living, moving, growing animal, or vegetable, ceases to exist as such; and dissolution follows, leading to the fact that, a total suspension of functional activity is preceded by a total absence of calorific combustion, the

only inextinguishable motor of animate existence.

It is very apparent that the hive-bee is only physically constituted to experience, to a certain degree, the coma to which the brute animals are subjected during the hibernal period, and can but lapse into short periods of repose; so that, when the fuel in its stomach becomes exhausted it must arouse, and eat to replenish the flames of life. The true hibernating animal does not partake of food during the hibernating period; although it does at times leave its hibernacular during very mild and comparatively long-continued thaws, even in mid-winter.

After having passed the limits of a definite grade of development, in its progress from the vegetable to the animal, no animal can become frozen solid, or even become sufficiently benumbed by cold, as to wholly destroy its vital functions, and live. The hive-bee, in its evolutionary rounds, has advanced beyond the degree correlative of the vegetable, and is now very nearly, if not wholly a distinct species of the insect animal, so to speak, and its existence, organic structure, means of obtaining food, method of reproduction, and habits of domestic economy are irrefragible evidence that its condition is beyond the *radical* principles; but not beyond the *broad* principles that govern the periodical subsidence and revival of the strictly vegetable species.

When the season wanes, the forest trees and shrubbery put on their terminal buds; growth ceases; and the elements contributing to their development are held in suspension until the genial warmth of the spring sun stimulates a renewal of their cyclic round of activity. Is not this period of repose and period of activity, as illustrated in the economy of the vegetable, when unconnected with the amimal, as admissible as when allied to, or performing its functions in union with the animal; when animate life is, in a certain degree, dependent upon the vegetable elements for the support of its impetus? Life, without the influence of motion on matter, is inadmissible.

When the term hibernation is used to describe the condition, or profound coma experienced by certain species of animals during the winter season, its scope can only include the vegetable elements, and must be confined, necessarily, to very nicely defined limits. Less than hibernation would be *nil;* more than hibernation would be dissolution. The intermediate condition, the equilibrium of the evolving forces, would be simply *repose.*

Again, it does not appear that the comatose condition evinced by the hibernating species is habitual with the hive-bee, as it does not accompany that insect from the regions of flowers and snow-storms, to the ever-blooming flora of tropical climes.

Cumberland, Maine.

NATURE'S WAY.

Management of Bees on Natural Principles.

Written for the American Bee Journal

BY W. S. VANDRUFF.

In this article I suppose I will depart considerable from the present way of managing bees, and especially for surplus comb honey. I think that the present system of working for comb honey is far from being in accordance with natural principles, and this is why there is so much trouble in getting bees to work in the sections. It seems that with the present management it is almost impossible to get the bees to build nice, straight comb honey in sections, free from pollen and brood, without using queen-excluders, separators, honey-boards, etc.

To get the bees into the sections also seems to be a great problem, and it seems that the only way devised by our leading bee-keepers is to use some kind of "force work." We read of all kinds of contraction methods that can be devised to force the bees into the sections, and after they are in the sections, the next great trouble is to get them to build the combs straight, free from pollen and brood, without using force work again, thus forcing the queen to stay below by putting on a queen-excluder. I think that if the natural inclinations of the bees were fully understood, and by proper manipulation, all this trouble could be overcome.

We should study the secrets of the bee's nature more than we do, and theorize less, and not make hives and fixtures just as we think they ought to be, unless they are in accordance with natural principles. I will now mention wherein I think that the present system is not managed on natural principles:

1. Bees naturally build their combs about 1½ inches apart, or a little less, from centre to centre. 2. Bees naturally cluster all together in one cluster to build comb. Now, to make the sections nearly 2 inches wide, and force the bees to build combs so far apart, is against their nature; and sections without side-openings are against their natural way of working. Also dividing up the cluster into a multitude of little clusters is entirely against the natural instincts of bees. Just think of a surplus chamber with fifty or more apartments divided off only about 4 inches square, and a little less than 2 inches wide, as is the case in usuing wide sections with separators and without side-openings. No wonder that we read of so much trouble in getting the bees into the sections. The system is against the very nature of bees.

I have used several kinds of hives, and know of about all kinds in use, but I have yet to see or read of a hive that comes up to my idea of one that meets the natural inclination of the bees. I have never used queen-excluders or separators—I have always believed them a hindrance to the working of bees. I have always managed to get along without them. I have been studying the natural inclination of bees, and the more I work in accordance with their nature, the more I can accomplish. I am working on the natural-principle system, and I am succeeding beyond my expectations. I succeeded the past season in getting nice, straight comb honey in sections, free from pollen and brood, even in the brood-chamber, and without using queen-excluders or separators. I used no force work to keep the queen out of the sections, but manipulated according to the nature of the queens and bees.

There is a cause for the queen laying in the sections, a cause for the bees putting pollen in the sections, and a cause for the bees making bulged and crooked combs; and I am making it a special study to try to discover these causes, and a remedy for them. I expect in the near future to perfect a system of getting nice, straight comb honey, free from pollen or brood. Such a system I will call the "Natural principle system," as I will work entirely on natural principles. I expect to be able to get comb honey in either story of the hive, without using queen-excluders, separators, or anything of the kind. I believe that it is possible to get honey in sections side by side with the brood-combs, without the queen laying in the sections, and without using queen-excluders.

It is because the combs are not manipulated in exact accordance with the nature of the queen and bees, that we get brood and pollen in the sections. The more machinery and hindrances in the way of queen-excluders, separators, etc., that we have about the hives, the less honey we will get; because any system that is not in accordance with the nature of the bees results in a loss of honey, as it retards the work of the bees.

This article may bring forth many criticisms; I cannot expect much else, as I am attacking a system in general

use all over this continent, and a system most generally approved by the leading bee-keepers of the present day. But I do not think that they believe the system has reached perfection.

[This "attack" fairly takes one's breath—it is so sudden—so general—so positive. Well, we shall await the advent of the "Natural principle system," and its practical test. We know that perfection has not been reached—but the system may or may not be one of the steps leading to it.—ED.]

APPLE BLOOM.

Destroying the Codling Moth with London Purple.

Written for the American Bee Journal
BY JOSEPH BEATH.

I noticed sometime since in the *Western Rural*, an article from Prof. A. J. Cook, relative to poisoning the codling moth. Will he please give an article on that subject in the AMERICAN BEE JOURNAL, telling how to do it, so as not to injure the bees, where there are a large number of trees? and where to get a suitable force pump, stating the price, etc.

Corning, Iowa.

[The following is Prof. Cook's responsive article on the subject:—ED.]

No enemy of the apple has been so much and so justly dreaded as the codling moth, *Carpocapsa pomonella Linn.* This little miner of the apple—the so-called "apple-worm"—is so wide spread, and so generally destructive, that many thousands of dollars worth of apples have been destroyed by it annually. Of late, however, we have found a very cheap, safe, and effective remedy in the Arsenites, London purple, or Paris green. I prefer London purple, as it is cheaper, more easily mixed with water, and stays mixed longer.

To use it, we mix one pound of the poison to 100 gallons of water. We apply it in May, just as the blossoms have fallen from the apple or pear trees. If applied earlier it may poison the bees, and will do no good for a few days, till the apple is formed, and before that it may be all washed off by a heavy rain. If deferred longer than just after the blossoms have fallen, many of the larvæ—"worms"—will have entered the fruit, and so be out of harm's way.

The time to apply it is when the apples are the size of small peas. If no heavy rains come, one application answers so well that a second one hardly pays. If a heavy rain comes within three weeks, a second application may well be made.

To treat an orchard, barrels of the liquid mixture should be taken in a wagon and drawn through the orchard and applied by use of a powerful force pump (as the poison is only held in suspension, of course it must be kept well mixed; we easily accomplish this by pumping into the liquid), so that the spray may be thrown on with such force that it will scatter to every fruit. With this weak mixture we can be so thorough as to be very certain to strike every apple, and yet not kill the foliage. If the spray is thrown on with great force, it scatters so that we are pretty sure to do very perfect execution. A good spray-nozzle is desirable. The Nixon—made at Dayton, Ohio—is the best that I know of.

NIXON FORCE PUMP.

The "Moody Field Force Pump" (N. Y.), attaches by a gearing to the wheels of the wagon, and so runs by the same power that draws the wagon. This costs about $28, but pays well where larger orchards are to be treated. A. H. Nixon also works a cart which is so arranged as to run the pump. The former pump I have tried, as I have the nozzle, and I know they are admirable. The latter pump I have not tried.—A. J. COOK.

BROOD-CHAMBERS.

My Position Regarding Sectional Hives.

Written for the American Bee Journal
BY DR. G. L. TINKER.

There seems to be an effort to draw me out on this subject, but I have no interest in the matter, one way or the other, except the general good of bee-keepers; and to this extent, those who wish to draw on me, may do so freely.

The subject of the essay I wrote for the Ohio State Convention, as published on page 86, was suggested by friends who no doubt expected me to write favorably of sectional brood-chambers, and so promote the interests of Mr. Heddon; and that I should have done, and have been glad to have done, if I could at the same time have written in the interests of bee-keepers. But that I could not do, and longer defend the sectional brood-chamber.

In the matter of bee-hives this experiment of Mr. Heddon is not the first, by any means, that has come to nothing; and he well alludes to one of the writers of a parallel nature. I am not at all ashamed of it, as in the case of Mr. Heddon's experiment and that of hundreds of others in this country, it failed in practice to "pan out" as beautifully as it did in theory. The only difference, if any, between us is, that my theory of "continuous passages" was not as finely spun as that on his divisible and interchangeable brood-chamber. Hence, I do not anticipate that my failure to realize will at all compare with his.

While failures have been the rule in introducing new bee-hives, they should not discourage us in the hope of obtaining something better than we now have; but they may well teach us that a trial of time will often bring out defects in our inventions that could not well have been foreseen.

As to my record in this matter, I confess to have thought well of the beautiful theories that Mr. Heddon gave us on bringing out his new hive, and only regret that they did not prove to be all that the gifted writer expected.

I have nothing further to add on the subject, to the carefully worded matter in my essay read before the Ohio convention.

New Philadelphia, O.

ALSIKE CLOVER.

Experience with Alsike Clover for Honey, for Pasture, and as a Fertilizer.

Written for the American Bee Journal
BY GEO. W. MORRIS.

I wish to add my little mite in favor of Alsike clover. Five years ago I obtained one bushel of seed, and sowed the same on about 20 acres of wheat and oats land, and got a fair stand of clover. The second year there was a fine bloom, and I had an extra crop of honey—1,300 pounds of extracted honey from 7 colonies, spring count, besides hiving 7 good swarms cast from them. I cut and threshed about 4 acres of the best of it, and received 6 bushels of nice, clean seed as a result.

I believe that it is equal to, if not better, as a fertilizer, than the common red clover, for three years ago I sowed, on shares, a field (wheat-field) belonging to another person, and the

result was a good stand of clover which was pastured the second season, and furnished a fine lot of grazing, too, considering that the land was thin and "tired."

The next spring (last year) this field was cultivated in corn, and although a comparatively dry season, it produced more corn and fodder than it had in one season for 15 years.

Another thing that I have noticed is, that horses inclined to rogue will always go to the field that has Alsike clover, thereby demonstrating their appreciation for this clover to other grasses. I have none sown at present, nor any land to sow on, but if some seedman will send to me a lot of Alsike clover Leaflets, free of cost, I will distribute them to farmers.

Cornishville, Ky.

HIVES.

Experience with Small Hives vs. Large Hives.

Written for the American Bee Journal

BY W. J. DAVIS.

I was much interested in the controversy between Messrs. Heddon, Dadant, and others, in Volume XXIII of the AMERICAN BEE JOURNAL, and then I proposed, at some further time, to give the results of my experience in the use of different sized hives.

I have no doubt that the season of the year at which the main honey harvest may be expected in different localities, has something to do in determining the proper size of hive for that place; and where the principal harvest occurs late (as in some portions of the West), a large brood-chamber *may* be preferable, hence Mr. Dadant may be correct in preferring such. But in northwest Pennsylvania our main harvest is from white clover, and commences about June 10, and lasts about four or five weeks. When the weather is favorable the yield of surplus honey is satisfactory. But good seasons are the exception. A majority of our Junes are either too dry or too wet for the best results.

After adopting the Langstroth hive in 1860, I made most of my hives to hold 8 Langstroth frames. The top-bar of the frame is 19 inches long. By way of experiment, I made about 60 hives to hold 12 frames in the brood-chamber, with an upper story for 80 pounds of surplus honey. These were mostly used for "out apiaries," of not more than 20 colonies each. A few of these large hives were used for several years in my home apiary, but never with satisfactory results; the larger the hive, the less surplus honey, and the most bees in the autumn.

About ten years ago I concluded to shorten my frames 5 inches, making them with a top-bar 14 inches instead of 19 inches. I made the change slowly, as facts demonstrated safety, until at present over 200 of my colonies occupy the shorter frames.

I am a specialist. I do not keep bees for fun, nor as a remedy for rheumatism. My bread and butter depends upon the success of the apiary. The hive that will give the most surplus honey without regard to increase of colonies, is the one for me. There are comparatively few bee-keepers who are located where the 100 or 200 pounds of surplus per colony is the average yield. Where one is so located where fields of white clover and forests of basswood abound, a hundred others will scarcely average 20 pounds per colony, and it is the sheerest nonsense to say that it is *all* in the *management*.

Presuming, then, that ninety-nine out of every one hundred bee-keepers of North America are not in a land flowing with milk and honey, it becomes a practical question how to secure the best returns for the capital and labor invested.

What I term a "small hive," as I use them, is one 12x13 inches, inside measure, and 10 inches from the bottom-board to the honey-board, and containing 752 square inches of comb, or 1,504 square inches of comb-surface. Allowing 28 bees to hatch from each square inch of comb surface, we have 42,112 bees hatching in every 21 days, or about 2,000 per day. This applies to the height of the breeding season, when there should be little or no honey in the brood-nest. During March and April I find that colonies build up more rapidly in the smaller hive, owing to the fact of greater warmth, or the better economizing of the heat of the cluster.

To get the brood-chamber crowded with bees, at the beginning of the honey harvest, and then apply the section-cases as fast as needed, raising the cases when about two-thirds full, and placing an empty case between the first case and the brood-nest, gives room sufficient. I find in every case that the bees in the smaller hives commence work in the sections several days sooner than in the larger hives. In poor seasons, like the summer of 1887, we are able to secure some surplus from colonies in small hives, while the large ones yield none.

Another reason why I prefer the smaller hives is, that on the approach of winter we have (to my mind) a proper sized colony of bees, and not a "boomer," with say one-half bushel of bees (and an exhausted queen) to consume the labors of the previous season, and be not one whit better on May 1, than the medium sized colony of the previous autumn.

It must be remembered that 1,000 or 10,000 bees cannot be reared without that per cent. of exhaustion to the queen, and also of the stores of the hive, and it should also be remembered that at present prices, the bees themselves have no value in the fall of the year, as they will not sell for more in the spring than the cost of the hive, value of the combs, and stores consumed, allowing such stores to have been placed in a marketable shape the previous summer. I speak only of the production of comb honey (extracted has no market in this locality).

Another reason for my preference is, the ease with which the hives are placed in winter quarters, and removed again to the summer stands.

Youngsville, Pa.

WATER FOR BEES.

Is it Necessary in Winter? When to Put them in the Cellar.

Written for the American Bee Journal

BY J. M. LYMAN.

At the recent convention in Indianapolis, regarding wintering bees, Mr. Bull is reported as saying that it is essential that bees be supplied with water. I do not know why. In New York State I have wintered bees on the summer stands, in Ohio only in the cellar, and I have lost bees in both ways; here, however, only from starvation, possibly by having never provided water.

I have taken bees out of their winter quarters in the spring, and upon examination I have found them without one drop of honey in all their realm. By a little feeding they made prosperous colonies. There are essentials in order to obtain the best results in everything, but conditions sometimes make it so impracticable that those sweeping assertions generally fail.

When to Put Bees into the Cellar.

In another convention was asked the question, "When is the best time to put bees into the cellar?" Would not good, common-sense be the best source of information? I recommend putting bees early into their long night of winter. The chill of early November warns them that it is time to prepare for the inclement season that is about to precipitate "upon the face of all the earth."

Generally, from 10 to 15 days thereafter, comes a warm, bright, sunny day to gladden and refresh the gloomy, old days, and out-rush the bees for a flight, a change, a rest and sight-see-

ing, and seldom reclustering in the same compact, judicious positions previously occupied. Detached, straggling clumps of bees can be found separated from the main clusters, on different positions of the combs and sides of the hive, probably expecting the following day to assume their proper place and position; but, alas, the sudden and severe change, to which this climate is subject, proves fatal, for the day of sunshine is changed to a night of frost! From the chill they seldom recover, so the loss is more than the gain from their brief flight.

My bees are never taken from the cellar until they are placed in position for their summer campaign.

I have the utmost patience for what seems *the* silliest question, when honestly set before us for information (the one quoted above is one of the solid ones); but I have infinite contempt for the man who parades his opinions as deductions from logic and science.

Toledo, Ohio.

FOUNDATION.

Fastening it in Sections and Frames.

Written for the American Bee Journal
BY ED. S. EDEN.

It is somewhat interesting to me to read the different replies to my letter on "Fastening Foundation into Sections," as published on page 790 of the BEE JOURNAL for 1887. Each one claims that his method or machine is just what is wanted. But I fail to see as yet (even after reading Mr. Alpaugh's letter on page 125) that the point of satisfaction is reached.

One of the faults with the majority of machines is, that they cannot be adjusted to different sized sections. Some machines (and Mr. Alpaugh's is one of them) can only fasten foundation into 4-piece sections, and that before the sections are put together. Each machine must be made for a certain size of section.

I have found that a large majority of bee-keepers prefer to fasten the foundation after the sections are put together, as it is far better and handier in every respect. I believe that my plan comes nearer to the line of perfection, for I can fasten foundation of any size, from ½-inch to full sheets, into 1, 2 or 4 piece sections; either before or after they are put together, at the rate of 12 to 15 per minute, or from 7,000 to 8,000 per day.

My bees are wintering well; all are alive so far, and appear to be in good condition.

Eastwood, Ont., Feb. 24, 1888.

TEMPERATURE.

The Proper Temperature of a Bee-Cellar.

Written for the American Bee Journal
BY WILLIAM CROWLEY.

I have read Mr. Tyrrell's article on page 25, with very much interest, as it coincides with my experience as to the proper temperature of a bee-cellar. I would like to ask, if bees will break cluster and become restless on the summer stands at a temperature of 45° Fahr., why will not the same condition exist in the cellar at the same temperature?

I have wintered bees in my cellar for three winters, and the first two winters I intended to keep the temperature at about 45°, but, like Mr. Tyrrell, I failed to control the elements, and the temperature in the coldest weather went down to 28°, and remained from 30° to 35° the greater part of the winter; at that temperature my bees remained quiet, but when the temperature reached 40° and upwards, then they became restless, and a great many left their hives and perished on the ground.

Last summer I had a powerful colony of a choice strain of bees (a prime swarm) that stored 140 pounds of comb honey, being about double the average of my apiary. When I took off the supers and prepared this colony for winter, the brood-chamber was so full that all the bees could hardly get in. After putting them in the cellar, this colony was very restless, while all the others were quiet, until the temperature went down below 40°, then it gradually became quiet.

When I examined them a month after putting them in, I found that the death-rate in the strong colony was equal to a dozen of any of the other colonies. I offer this observation to strengthen Mr. Tyrrell's theory, that we should make the colonies as nearly equal in strength as possible, before putting them into winter quarters. When the colony became reduced in numbers, they could endure the same temperature as the others.

I must go a little further than Mr. Tyrrell; for I want my bee-cellar to range from 30° to 35°, or as near the freezing point (32°) as possible, to insure the best results. How many, from careful observation, dare leave the beaten track and "beard the lion in his den," on this question?

It seems to me that the climate in our different latitudes may have something to do with this question. Here in Minnesota the air is very dry in winter; it seldom thaws after winter begins, until it breaks up in the spring. It is cold here at times; on the mornings of Jan. 15 and 20, the thermometer registered 40° below zero. We call it mild weather here when it is at zero, and 20° to 25° below zero is not bad.

Redwood Falls, Minn.

BEE-KEEPING.

The Italians vs. Common Bees—Honey-Plants, etc.

Written for the American Bee Journal
BY ROLAND SHERBURNE.

The past season may prove a blessing in disguise to some of us. The winter has been cold and steady, and no doubt nearly all the bees in this part of Iowa, that have been left uncared for, will perish. As far as I can learn they are nearly all dead already in this neighborhood.

My largest apiary being in a good locality near timber, the bees gathered sufficient stores for the winter, after equalizing them. But the apiary near town, on the prairie, did not average 10 pounds per colony in the fall.

The past season fully demonstrated the great superiority of Italians over the common bees. What few nearly black colonies I had, did not gather more than enough to eat; and my best Italian-hybrids, that I had always considered equal to any as honey gatherers, did not do nearly as well as the pure Italians; while about a dozen hives that I had marked in the spring as extra colonies, fully proved themselves such. For one to have such hives with 50 or 75 pounds of honey in them, while rows of other hives equally strong in bees have but little honey, speaks volumes towards the profitableness of bee-keeping.

I am wintering my bees in the cellar, and to all appearances they are in excellent condition. I expect to lose a few colonies for want of stores, if the cold weather continues long.

White clover, heart's-ease, and many other honey-producing plants are abundant in this part of Iowa, and as a consequence, a great many keep bees, and supply the local market with honey. It is brought to market in many ways, and, of course, sold cheap. If an excellent article is produced, it must find another market, for people rate the price by the cheapest sold.

I hope no one would for a moment be so selfish as to wish a loss, even in part, to an honest industry, that adds to our agricultural wealth, to the enhancement of a few; but the past season may prove to us the necessity of taking care of our bees, and of having a fair knowledge of them.

Lone Tree, Iowa, Feb. 25, 1888.

COLORADO.

Report of the State Convention Held at Denver.

The Colorado State Bee-Keepers' Association held an adjourned meeting on Feb. 23, 1888. There was an unusually large number present, and great interest was manifested. Colorado is rapidly coming to the front as a honey-producing State, and our bee-keepers are alive to the needs of the hour.

The proceedings consisted in thorough discussion of topics pertaining to successful bee-culture.

The following is from the Colorado *Farmer:*

In discussing "The causes of candied honey," Mrs. Levi Booth considered it was owing to the kind of honey and the season; when there was a good deal of dew and rain, honey does not candy. She had kept it in a dark room, and had 500 pounds candy solid in the comb. This year she had kept it in a light room, and it was in good condition, notwithstanding the fact that it had frozen.

Messrs. Davis, Rhodes and others thought that the candying of two or three years ago was caused by the dry season. The bees secured the honey from the yellow rosin-weed.

President Milleson had wintered bees on candied honey, not a spoonful of liquid honey being found in the hive; but he kept a saturated sponge in the top. Bees must have the water. Before he used the sponge the bees tore the comb and scattered it to get out the moist parts of it.

V. De Vinney wanted to know if alfalfa honey would not candy faster than clover.

Mrs. Booth had no candied honey last year, yet her bees had nothing but alfalfa and bee-weed.

Louis Brock, of Littleton, had had the same experience.

"How often should the queens be changed?"

Robert James thought that if they would change every two years they would have stronger colonies. When asked by the President to give his experience with Cyprians, he said he would not keep them for they were too cross. He had counted 165 queen-cells in a single hive, fifty of them being capped over. They were so cross you could hardly smoke them down, yet they would fill a 20-pound box with surplus in a short time after swarming.

"Can you restore a colony of fertile workers? In what way?"

D. C. Thompson, of Brighton, examined his hives last year, and occasionally he would find no queen, but fertile workers. He introduced queen-cells, queens in cages, etc., but to no avail.

"How long does it take to hatch bee-eggs?"

The President said: "By the best authorities, 16 days for queen-bees, 21 for workers, and 24 for drones to mature."

"Which is preferable, natural swarming or dividing?"

Mr. Rhodes considered there was not much difference. He divided as it was most convenient, where they kept an imported queen to get queens from. Natural swarms come when we do not want them.

The discussion showed that natural swarming would cause the most honey; dividing, the most bees.

"Is it advisable to keep bees unless familiar with theories of standard authors?"

Mr. Porter in answer would say, no. Out his way many had rushed into the business, and yet had to buy their honey. They should read and get one colony to practice upon. The first year he kept bees he thought he knew it all, but now he felt he knew nothing, although he studied much. The AMERICAN BEE JOURNAL was recommended.

Mrs. Booth, on the best method to prevent robbing, said: "Make the entrance to the hive about ½ inch only, and this will enable the colony to keep out the robber bees."

Mr. Goodrich, of Illinois, said that they were satisfied with 15 days. They must be in readiness for their swarms. If they get ten days' good flow of honey they were pretty sure of 125 pounds of surplus honey. After 60 days from the time of the first flight, they can fill the hive. If you want bees, you must let them swarm naturally, but dividing the colonies might be successful. If the colony was weak, cut off the queen's head. Do not divide so as to depopulate the hive.

"How does California compare with Colorado in bee-culture?"

Robert James said that the white sage which grew in the canyons was the chief honey supply. When there are a plenty of blossoms the honey crop is good. Since we have introduced alfalfa there is rarely a failure, but drouth often causes it there.

Mrs. Rhodes said that with alfalfa there was little honey four years ago. We were liable once in a while to failure.

Mr. Clark said all preferred Colorado honey. He could get 2 or 3 cents per pound more for it than for California, yet we must expect some failures, as all States had them.

"How can we best winter bees?"

Mr. Porter said that we need to pay little attention to that. We were so busy that we left them out-doors, and they were all right. If he had a large cellar, and conveniences for getting them in, he would prefer the cellar. But if a little straw or earth be thrown on the north side, they can be kept out all winter

The convention elected as delegates to the next North American Bee-Keepers' Convention, Mr. W. L. Porter, of Greeley, Mrs. Levi Booth, of Denver, and Mrs. R. H. Rhodes, of Arvada.

A motion passed unanimously, giving the preference to Columbus, Ohio, as the place of meeting of the next North American Bee-Keepers' Convention.

After discussing the time for holding the annual meeting, and the subject of rye meal for spring feeding, where there was a great diversity of opinion as to its value, the association adjourned to meet Aug. 14, at 10 a.m., in the Horticultural Association rooms.

J. M. CLARK, *Sec.*

QUEEN-CAGE.

A Cage for Introducing Queens, and How to Use It.

Written for the American Bee Journal
BY VET. TUCKER.

Quite a number of queen introducing-cages have been spoken of in the BEE JOURNAL, but the following suggested by a friend, I think is superior to any other that I have examined:

It is similar to the Peet cage, except that it is covered on both top and bottom with wire-cloth, and has a bee-space opening on one side, and a queen-excluding opening on the other. It is provided with food as usual, and the queen and her attendants are run in at the bee-space opening, when all is closed. The cage is then placed on top of the frames of a queenless colony, and a cover placed over, in which an opening has been made the size of the cage into which it is adjusted. Place a small cover over the cage. The queen is now similarly situated as in the Peet cage.

After the usual time given for the bees to become acquainted with the queen, remove the plug from the queen-excluding opening into the cage, and raise the cover even with the top of the cage, and fasten it by means of small pins inserted for the purpose. The workers now have free access to the queen, but the queen cannot leave the cage.

After leaving things in this condition for a short time, return and see if all is well, by lifting the small cover from the cage.

The object of the wire-cloth on top is, that these examinations, etc., can

be made without coming in contact with the bees.

If all is well, the bees will soon commence carrying the food from the cage to the frames below, and thus become acquainted with the queen. If, on examination, the bees are found belligerent, drop the cover to the bottom of the cage, and with a few puffs of smoke, remove all the bees but the attendants, and close the cage. After the usual time, the same can be repeated, and so continue until the bees are friendly to the queen.

When this has been accomplished, open the bee-space on the other side of the cage, and the queen can leave at her pleasure, and commence her labors without danger of attack. Thus the colony is not disturbed at liberating the queen—a factor of no small value, as disturbance sometimes causes the bees to attack their queen after she has been with them for months.

It is difficult to catch and cage a queen, if she is not accepted when liberated. With this cage the queen is always in hand. I have liberated queens which were immediately attacked and put to flight before going among the bees. This could never occur with the above-described cage. I think that it is nearly, if not quite, infallible.

Shelby, Ohio.

MOLDS.

How to Make and Use Foundation Molds.

Written for the American Bee Journal

BY JOHN FARIS.

Foundation molds are made as follows: Make two frames the size of the mold wanted, something like a slate-frame; hinge the two frames together, fit a board in one frame, lay a sheet of foundation on the board, and close the frames. Have the plaster of Paris already mixed, fill the top frame, working it well into every cell, and when the plaster sets, turn over the frames, and take out the board and fill the other frame in the same manner. Let them alone about ten minutes, and then pry open and take off the sheet of foundation, when the molds are ready for use.

Make a tin box for Langstroth molds, 44 inches long, 14 inches wide, and 6 inches deep, with a wooden rim around the top 3 inches wide. Now make another tin box an inch larger, and tack it to the rim; fill the empty space with water, and put it on a stove. Put the beeswax into the box, and heat the whole apparatus until the wax is thoroughly melted; then let the wax cool down, put in two cross-sticks 2 inches from the top of the box at one end of the box.

Before operating is begun, put the molds in luke-warm water, and let them get thoroughly wet; then put the molds on the cross-sticks in the box, and with a dipper or tin cup, pour the wax on one plaster. Close the molds immediately, and gently press them with both hands four or five seconds, and then plunge them into cold water a few seconds. Take them out, and pry them open, and peel off a perfect sheet of foundation, ready for the bees. Or, if you have 10 or 15 pounds of wax, you can dip one plate in the wax, put the plates on the cross-sticks, and close them as in the previous operation. This way makes foundation which will will not sag or break down like the rolled.

Town House, Va.

CANADA.

Report of the Welland County Convention.

The Welland County Bee-Keepers' Association was organized at the Town Hall in Ridgeway, Ont., on Monday, Feb. 20, 1888. Owing to the heavy rains during the day, and the condition of the roads, many persons who had signified their intention of being present, were prevented. Eleven persons were enrolled as members. A courteous letter from Prof. Snider, regretting his inability to be present, and promising to be at the next meeting, was read. The following were elected as officers: H. J. Herber, President; C. H. Mathews, Vice-President; and J. F. Dunn, Secretary-Treasurer.

The different methods of wintering bees was pretty thoroughly discussed.

Mr. Herber winters his bees in a clamp, packed with sawdust in a barn, with the hive-entrances so arranged that the bees can fly on warm days.

Mr. Mathews winters his bees in a clamp, out-doors, the hives being packed in sawdust and forest leaves, with a cushion over the brood-nest, and the honey-boards off. His bees are in good condition.

H. Johnston winters his bees in double-walled sawdust hives, with a sawdust cushion 3 inches thick over the bees, and the super filled with corn-cobs. His bees winter well also.

A number asked, "Do bees seek a home before swarming?" The opinions seemed to be pretty evenly divided on this question.

One member said that a Mr. Troup, of Welland county, had observed a few bees cleaning out a cavity in a decayed tree, and the next day a colony from a neighboring yard occupied the cavity.

The Secretary thought that was no proof, and that bees do seek a home before swarming. A small swarm may have occupied the cavity first, and the one issuing the next day united with them.

Then followed a talk on hiving swarms and contracting the brood-nest. Mr. Herber favored contraction, but thought that the bees would be found in better condition for winter if contraction were not practiced. The bees would have to be fed, etc., and the novice had better let contraction alone.

Discussions on minor topics occupied the balance of the time, after which the convention adjourned to meet again in Welland, Ont., on Monday, May 7, 1888. J. F. DUNN, *Sec.*

Honey and Beeswax Market.

DENVER.

HONEY.—Best white 1-lb. sections, 17@19c.; 2-lb. sections, 15@17c. Extracted, 7@10c.
BEESWAX.—20@23c.
Mar. 1. J. M. CLARK & CO., 1409 Fifteenth St.

KANSAS CITY.

HONEY.—We quote: Choice white 2-lb. sections, 17@18c.; dark 2-lbs, 14@15c.; choice white 1-lbs., 18 to 20 cts.; dark 1-lbs., 15@16c. White extracted, 7@8c.; dark, 5@6c. Demand is slow. White extracted is firm when in 60-lb. tin cans.
BEESWAX.—21 to 22c.
Feb. 29. HAMBLIN & BEARSS, 514 Walnut St.

NEW YORK.

HONEY.—We quote: Fancy white in 1-lb. sections, 15@18c.; the same in 2-lbs., 13@15c.; buckwheat 1-lbs., 11@12c.; 2-lbs., 10@11c. Off grades 1@2c. per lb. less. White extracted, 8@9c.; dark, 5½@6c. Market dull.
BEESWAX.—22@23c.
McCAUL & HILDRETH BROS.,
Feb. 21. 28 & 30 W. Broadway, near Duane St

CINCINNATI

HONEY.—We quote extracted at 4@9c. per lb. Choice comb, 16@20c., in the jobbing way. Demand fair and supply good.
BEESWAX.—Demand is good—20@22c. per lb. for good to choice yellow, on arrival.
Feb. 20. C. F. MUTH & SON, Freeman & Central Av.

BOSTON.

HONEY.—We quote: 1-lb. sections, 16@17c.; 2-lb. sections, 14@16c. Extracted, 8@9c. The market is not very brisk and sales are slow.
BEESWAX.—25 cts. per lb.
Feb. 24. BLAKE & RIPLEY, 57 Chatham Street.

SAN FRANCISCO.

HONEY.—We quote: White to extra, 15@18c.; amber, 13@16c. Extracted, white liquid, 7@7½c.; amber and candied, 5½@6½c. Market quiet.
BEESWAX.—24@24c.
Feb. 18. SCHACHT & LEMCKE, 122-124 Davis St.

DETROIT.

HONEY.—Best white in 1-pound sections, 17@19c. Extracted, 9@10c. for light colored. Market weaker and supply only fair.
BEESWAX.—22@23c.
Feb. 17. M. H. HUNT, Bell Branch, Mich.

CHICAGO.

HONEY.—Prices range from 16@18c. for best one lb. sections; 2-lbs. or about, 14@15c. Dark is slow of sale, with no steady price. Extracted moving slowly. Offerings of all kinds are large. Demand better.
BEESWAX.—22@23c. R. A. BURNETT,
Feb. 16. 161 South Water St.

KANSAS CITY.

HONEY.—We quote: White 1-lbs., glassed, 16@17c; unglassed, 17@18c.; and dark 1-lbs., glassed, 15c.; unglassed, 16c.; white 2-lbs., glassed, 16c.; unglassed 2-lbs., 17c. California white 2-lbs., 17c. California extracted in 60-lb. cans, 8c. Market quiet and receipts are larger.
BEESWAX.—No. 1, 20c.; No. 2, 18c.
Feb. 9. CLEMONS, CLOON & CO., cor 4th & Walnut.

MILWAUKEE.

HONEY.—Choice white one-lb. sections, 18@19c.; 2-lbs., 15@16c.; 3-lbs., 14@15c. Dark and broken not quotable. Extracted, white in kegs and tin, 8@9½c.; ½-barrels and barrels, 8½@9c.; dark and mixed in same, 6@7c. Market slow; better demand expected.
BEESWAX.—22@25c.
Feb. 2. A. V. BISHOP, 142 W. Water St.

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

ALFRED H. NEWMAN,
BUSINESS MANAGER.

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Hilton's new pamphlet on Comb Honey Production has been reduced in price to 5 cents. For sale at this office.

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Please write *American Bee Journal* on the envelope when writing to this office. Several of our letters have already gone to another firm (a commission house), causing vexatious delay and trouble.

Money Orders for $5.00 and under, cost 5 cents. As these are absolutely safe, it will pay to get them instead of the Postal Notes which are payable to any one who presents them.

Clover Seeds.—We are selling *Alsike Clover Seed* at the following prices: $8.00 per bushel; $2.25 per peck; 25 cents per lb. *White Clover Seed:* $10.00 per bushel; $2.75 per peck; 30 cents per lb. *Sweet, or Melilot, Clover Seed:* $6.00 per bushel; $1.75 per peck: 20 cents per lb.—by express or freight.

Photographs of Bee-Keepers.—The "medley" gotten up by E. O. Tuttle, containing the faces of 131 representative apiarists, and a printed sketch of each one, will be sent with the BEE JOURNAL for one year for $1.75; or we will present it *free*, by mail, to any one, for a club of three subscribers and $3.00.

The Convention.—The pamphlet containing the report of the proceedings of the Union Convention in Chicago, is now published, and can be obtained at this office for 25 cents. Or bound up with the history of the International Society, and a full report of the Detroit and Indianapolis conventions, for 50 cents, postpaid.

Home Markets for honey can be made by judiciously distributing the pamphlets, "Honey as Food and Medicine." Such will create a demand in any locality at remunerative prices. See list on the second page of this paper.

It is Extravagant Economy not to have hives, sections, comb foundation, etc., on hand when needed. To prevent disappointment, order early what you will need in that line. Then the hives can be nailed and painted in odd times, and the sections put together, so as to be ready at a minute's notice. It is a sad disappointment to need these things and then not have them on hand. They should be ordered very soon. We are promised an early spring, and a good honey crop.

Give a Copy of "Honey as Food and Medicine" to every one who buys a package of honey. It will sell lots of it.

Look Over last year's numbers of the BEE JOURNAL, and if any are missing, send for them at once, as we have but few left now, and they are daily becoming less.

A Pocket Dictionary will be presented for two subscribers with $2.00. It is always useful to have a dictionary at hand to decide as to the spelling of words, and to determine their meaning.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

We Supply Chapman Honey-Plant **SEED** at the following prices: One ounce, 40 cents; 4 ounces, $1; ½ pound, $1.75; 1 pound, $3. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

We Club the AMERICAN BEE JOURNAL and the "Bee-Keepers' Magazine" for one year for $1.40; or with "Gleanings in Bee-Culture" for $1.75; or with the "Apiculturist" for $1.80; or the "Canadian Honey-Producer" for $1.30; with the Bee-Keepers' Review, $1.40; or all six for $4.00.

Red Labels for Pails.—We have three sizes of these Labels ranging in size for pails to hold from one to ten pounds of honey. Price, $1 for a hundred, with the name and address of the bee-keeper printed on them. Smaller quantities at one cent each; but we cannot print the name and address on less than 100. Larger quantities according to size, as follows:

	Size A.	Size B.	Size C.
250 Labels	$1.50	$2.00	$2.25
500 Labels	2.00	3.00	3.50
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Advertisements.

Full Colonies of Bees for Sale

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I HAVE 50 Select Tested QUEENS of last year's rearing, that I will sell in April at $3 00 each; in May, $2.50; in June, $2.00; and from July 1 to Nov. 1, $1.50.

QUEENS, warranted purely mated, $1.00; 6 for $5 00. They are bred from the best of mothers and are superior to the common run of Queens sold at a lower price without any guaranty as to purity. I do not pretend to rear Queens under the Swarming Impulse. I believe with those who answer Queries in this JOURNAL—that it is a humbug. When it is necessary to stimulate to get good Cells, I do so, and that is all there is in it.

☞ Have your orders booked ahead, and send for the Queens when you want them. I will commence shipping Warranted Queens as early in May as possible. I guarantee safe arrival. Address, **J. T. WILSON,**
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THE BEE-KEEPERS'

REVIEW,

FOR FEBRUARY, is now out. (It has been delayed by the serious illness of its editor). The special topic of this issue is "TEMPERATURE" as applied to bee-repositories. So much information on this topic has probably never before been gathered into so small a space. The treatment is exhaustive, and it would seem that nothing more need be said on the subject.

Among the contributors to this Number are such men as R. L. Taylor, James Heddon, H. R. Boardman, F. Boomhower, T. F. Bingham, J. A. Buchanan and C. C. Miller.

Several pages are devoted to editorials upon a variety of live topics. There are also choice extracts from the writings of Prof. Cook, C. W. Dayton, C. C. Miller, and others.

A list of contents will not be published, as a copy will cheerfully be sent to all who ask for it. Price of the **REVIEW,** 50 cts. a year.

The Production of Comb Honey,

A neat little Book of 45 pages, price 25 cents. The REVIEW and this book for 65 cents. Stamps taken, either U. S. or Canadian.

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Beeswax.—We will pay **20 cents** per pound, delivered here, for Yellow Beeswax. To avoid mistakes, the name of the shipper should always be on each package.

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